<div align="center">REMARKS</div>

No amendments have been made. Claims 1, 2, 4 – 10, and 13 – 20 are pending in this Application. Reconsideration and further examination is respectfully requested.

<div align="center">Claim Rejections - 35 U.S.C. §103</div>

1.   Claims 1, 10, & 15 were rejected under 35 USC 103(a) as being unpatentable over Sandstrom (U.S. Patent Publication # 6697373) in view of Pangrac et al. (U.S. Patent Pub. # 20010030785). This rejection is respectfully traversed, because Sandstrom and Pangrac, taken either alone or in combination, fail to teach or suggest all the elements of the Applicant's claimed invention.

As explained in the Applicants' previous response, the Applicants' invention uses two metrics – one, a _utilization metric_ representing a measure of current usage of _maximum allowed bandwidth_ for a service; and the other, a _current utilization metric_ representing a measure of _current usage of allocated bandwidth_ for that service. Additional bandwidth is allocated to a service in response to the _current utilization metric_ unless the link is at full capacity; otherwise bandwidth is balanced between the services such that the _utilization metrics are made approximately equal_. Note that the utilization metrics are based on maximum allowed bandwidth for a service – which is not necessarily equal for each service.

The Office Action admits that "Sandstrom does not disclose computing metric of a usage of maximum allowed bandwidth, and the metric of current usage of the allowed bandwidth, so that the two metrics are made approximately equal to each other."

The Office Action then refers to Pangrac as follows:

In the same field of endeavor, Pangrac clearly shows computing for each service a utilization metric (paragraph 0081, lines 10-20 (monitors the switch to determine the appropriate allocation)) representing a measure of current usage of a maximum allowed bandwidth for that service (paragraph 0081, lines 7-20 (monitor bandwidth usage so it operating within the maximum bandwidth capacity)).

computing for each service a current utilization metric (paragraph 0068 (tracks bandwidth usage of each service type)) representing a measure of current usage of the allocated bandwidth by that service (paragraph 0068 (monitors and stores allocated bandwidth usage)); and

such that the utilization metrics of the services are made approximately equal to each other (paragraph 0069, lines 16-26 (demand for bandwidth may be moved to different RF modem for better bandwidth usage)).

The Applicants disagree with the characterization of Pangrac as set forth in the Office Action. Pangrac describes a cable modem system wherein subscribers are allocated unshared bandwidth (Pangrac, Abstract). At paragraph 0081 of Pangrac, it is merely stated that bandwidth usage of switches within a switch matrix are monitored to ensure the switches are properly allocated within the matrix. At paragraph 68 of Pangrac, it is explained that a bandwidth manager tracks bandwidth usage by subscriber devices. At paragraph 69 of Pangrac, it is stated that the bandwidth manager can assign gateways to RF modems dynamically. ("…including the ability to switch a gateway 139 to another RF modem 121 or in the event of a change in bandwidth allocation and/or to increase available bandwidth utilization.") But, despite all this bandwidth tracking, nowhere are metrics based on the tracked bandwidths compared to each other to keep them equal. The Office Action refers to paragraph 0069, lines 16-26 "(demand for bandwidth may be moved to different RF modem for better bandwidth usage)", but this merely suggests that the bandwidth manager is adjusting the bandwidth of a destination. It certainly does not suggest that utilization metrics of several services are being made approximately equal. The Office Action offers no further suggestion in Pangrac for this claimed limitation, and the Applicants can find none.

It is established that "Sandstrom does not disclose computing metric of a usage of maximum allowed bandwidth. and the metric of current usage of the allowed bandwidth. so that

the two metrics are made approximately equal to each other", and it is clear also that Pangrac

fails to teach or suggest a metric of current usage of the allowed bandwidth, <u>so that the two</u>

<u>metrics are made approximately equal to each other</u>.   Therefore, no combination of Sandstrom

and Pangrac can teach or suggest a method of managing bandwidth including "allocating

additional bandwidth to one of the services in response to the current utilization metric of that

service if bandwidth usage of the optical link is currently at less than full capacity, otherwise

balancing the bandwidth allocation between the services in response to the current utilization

metric of at least one of the services if the bandwidth usage of the optical link is currently at full

capacity, such that the utilization metrics of the services are made approximately equal to each

other", as set forth in the Applicants' exemplary Claim 1.

The Applicants therefore respectfully request that the rejection of Claim 1 be withdrawn.

Independent Claim 10 contains limitations similar to those of Claim 1 and is believed allowable

for the same reasons. The Applicants therefore respectfully assert that Claim 1, Claim 10, and its

dependent Claim 15 are in condition for allowance.

2.   Claims 6, 8, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over

Sandstrom in view of Pangrac and further in view of Aimoto et al. (U.S. Patent # 6144636). This

rejection is respectfully traversed.

Claims 6 and 8 are dependent on Claim 1. Claim 13 is dependent on Claim 10. As

previously set forth, Sandstrom and Pangrac fail to teach or suggest all the elements set forth in

independent Claims 1 and 10. Aimoto adds nothing further that would solve the deficiencies of

Sandstrom and Pangrac. The Applicants therefore respectfully assert that claims 6, 8 and 13 are

in condition for allowance.

3.   Claims 16 - 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over

Bruckman et al. (U.S. Patent Publication # 20040179519), in view of Sandstrom and further in

view of Pangrac. This rejection is respectfully traversed.

Independent Claim 16 sets forth a network having first and second network elements,

"each of the first and second network elements determining for the first and second services,

respectively, a utilization metric representing a measure of current usage of a maximum allowed

bandwidth for that service, the first and second network elements balancing the bandwidth

allocated to the services if the current utilization metric of at least one of the services exceeds a

specified threshold and usage of the bandwidth of the common link is currently at full capacity,

such that the utilization metrics of the services are made approximately equal to each other".

Again, Sandstrom and Pangrac fail to teach or suggest the invention as set forth in Claim

16 for the same reasons as set forth with regard to Claim 1, and Bruckman adds nothing further

to solve the deficiencies of Sandstrom and Pangrac. The Applicants therefore respectfully assert

that Claims 16, and dependent Claims 17 and 18, are in condition for allowance.

4.   Claims 2 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over

Sandstrom in view of Pangrac and in view of Brandstad et al. (U.S. Patent # 6498782). This

rejection is respectfully traversed.

Claim 2 and 4 are dependent on Claim 1. As previously set forth, Sandstrom and Pangrac

fail to teach or suggest all the elements set forth in independent Claim 1. Brandstad adds nothing

further that would solve the deficiencies of Sandstrom and Pangrac. The Applicant therefore

respectfully asserts that claims 2 and 4 are in condition for allowance.

5.   Claims 5 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom in view of Pangrac and in view of Brandstad and in view of Aimoto. This rejection is respectfully traversed.

Claim 5 and 9 are dependent on Claim 1. As previously set forth, Sandstrom and Pangrac fail to teach or suggest all the elements set forth in independent Claim 1. Brandstad and Aimoto add nothing further that would solve the deficiencies of Sandstrom and Pangrac. The Applicant therefore respectfully asserts that claims 5 and 9 are in condition for allowance.

6.   Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom in view of Pangrac and Aimoto and in view of Branstad. This rejection is respectfully traversed.

Claim 14 is dependent on Claim 10. As previously set forth, Sandstrom and Pangrac fail to teach or suggest all the elements set forth in independent Claim 10. Aimoto and Branstad add nothing further that would solve the deficiencies of Sandstrom and Pangrac. The Applicant therefore respectfully asserts that claim 14 is in condition for allowance.

7.   Claim 7 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom in view of Pangrac and in view of Bruckman. This rejection is respectfully traversed.

Claim 14 is dependent on Claim 10. As previously set forth, Sandstrom and Pangrac fail to teach or suggest all the elements set forth in independent Claim 10. Bruckman adds nothing further that would solve the deficiencies of Sandstrom and Pangrac. The Applicant therefore respectfully asserts that claim 7 is in condition for allowance.

8.   Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and Aimoto and further in view of Montgomery, JR (US Pub. #2004005745). This rejection is respectfully traversed.

Claim 19 is dependent on Claim 16. As previously set forth, Bruckman and Sandstrom

fail to teach or suggest all the elements set forth in independent Claim 16. Montgomery, JR adds

nothing further that would solve the deficiencies of Bruckman, Sandstrom, and Aimoto. The

The Applicant therefore respectfully asserts that claim 19 is in condition for allowance. The

Applicant further points out that Claim 19 is allowable over any combination of Bruckman,

Sandstrom, Aimoto, Montgomery, and Pangrac.

9.   Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in

view of Sandstrom and Pangrac, and in view of Branstad. This rejection is respectfully

traversed.

Claim 20 is dependent on Claim 16. As previously set forth, Branstad and Bruckman add

nothing further that would solve the deficiencies of Sandstrom and Pangrac. The Applicant

therefore respectfully asserts that claim 20 is in condition for allowance.

<div align="center">CONCLUSION</div>

In view of the amendments and remarks made herein, Applicants submit that the

application is in condition for allowance and request early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicants'

representative would expedite allowance of this application, the Examiner is cordially invited to

call the undersigned at (508) 303-2003, or at the undersigned's mobile, (617) 901-6786.

Respectfully submitted,

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